Configuration Guidelines for the Cisco 7000 Family

This chapter provides configuration information about the Cisco 7000 family, which includes the following routers:

- Cisco 7000
- Cisco 7010
- Cisco 7204 (available Q3 1996)
- Cisco 7206
- Cisco 7505
- Cisco 7507
- Cisco 7513

The information is organized into the following sections:

- Options Listing
  - Interface Processors
  - Port Adapters
  - Cisco 7500 Series Options
  - Cisco 7000 Series Options
  - Cisco 7200 Series Options
- Planning Optimum Configurations
  - VIP Memory Guidelines
  - CIP Memory Guidelines
  - Flash Memory Card Guidelines
  - DRAM Guidelines
- Verifying Interface Processor Compatibility
  - Process Flowchart
  - Cisco Board Numbering Conventions
  - Determining Board Part Number and Revision
- Configuration Worksheets

Options Listing

This section provides tables of options and configuration guidelines for the Cisco 7000 family. Use these tables to fill out the configuration worksheets at the end of this chapter.

Note Product numbers in the following tables represent options ordered as part of an initial system. Many of these products can be ordered as a spare by appending an equal sign (=) to the end of the product number.

Interface Processors

The following table lists the interface processors and interface processor options common to the Cisco 7000 series and Cisco 7500 series routers.

Table 106 Interface Processors and Interface Processor Options—Cisco 7000 Series and Cisco 7500 Series

Interface Processor	Description	Product Number
AIP	ATM Interface Processor, TAXI multimode, 100 Mbps	CX-AIP-TM
	ATM Interface Processor, SONET/SDH multimode, 155 Mbps	CX-AIP-SM
	ATM Interface Processor, SONET/SDH single mode, 155 Mbps	CX-AIP-SS
	ATM Interface Processor, E3 coaxial, 34 Mbps	CX-AIP-E3
	ATM Interface Processor, DS3 coaxial, 45 Mbps	CX-AIP-DS3
CIP[1]	Channel Interface Processor with single parallel channel	CX-CIP-PCA1
	Channel Interface Processor with dual parallel channel	CX-CIP-PCA2
	Channel Interface Processor with single ESCON channel	CX-CIP-ECA1
	Channel Interface Processor with dual ESCON channel	CX-CIP-ECA2
	Channel Interface Processor with single ESCON channel and single parallel channel	CX-CIP-ECAP1
EIP	Ethernet Interface Processor, 2-port	CX-EIP2
	Ethernet Interface Processor, 4-port	CX-EIP4
	Ethernet Interface Processor, 6-port	CX-EIP6
FEIP	Fast Ethernet Interface Processor, 1-port	CX-FEIP1TX
	Fast Ethernet Interface Processor, 2-port	CX-FEIP2TX
FIP	FDDI Interface Processor, multimode to multimode	CX-FIP-MM
	FDDI Interface Processor, single-mode to single-mode	CX-FIP-SS
	FDDI Interface Processor, multimode to single-mode	CX-FIP-MS
	FDDI Interface Processor, single-mode to multimode	CX-FIP-SM

Interface Processor	Description	Product Number
FSIP	Fast Serial Interface Processor, 4-port	CX-FSIP4
	FSIP dual-port port adapter (PA), default is 2	PA-7KF-SPA[2]
	FSIP E1-G.703/G.704 120-ohm dual port adapter (PA)	PA-7KF-E1/120[2]
	FSIP E1-G.703/G.704 75-ohm dual PA	PA-7KF-E1/75[2]
	Fast Serial Interface Processor, 8-port	CX-FSIP8
	FSIP dual-port port adapter (PA), default is 2	PA-7KF-SPA[2]
	FSIP E1-G.703/G.704 120-ohm dual port adapter (PA)	PA-7KF-E1/120[2]
	FSIP E1-G.703/G.704 75-ohm dual PA	PA-7KF-E1/75[2]
HIP	HSSI Interface Processor, 1 high-speed serial port	CX-HIP
MIP	MultiChannel Interface Processor, 1-port T1/PRI	CX-MIP-1CT1
	MultiChannel Interface Processor, 2-port T1/PRI	CX-MIP-2CT1
	MultiChannel Interface Processor, 1-port E1/PRI, 75 ohm	CX-MIP-1CE1/75
	MultiChannel Interface Processor, 1-port E1/PRI, 120 ohm	CX-MIP-1CE1/120
	MultiChannel Interface Processor, 1-port 75 ohm balanced or 120 ohm unbalanced	CX-MIP-75/120
	MultiChannel Interface Processor, 2-port E1/PRI, 75 ohm	CX-MIP-2CE1/75
	MultiChannel Interface Processor, 2-port E1/PRI, 120 ohm	CX-MIP-2CE1/120
POSIP	Packet OC-3 Interface Processor, 1-port 155.520-Mbps multimode, 16-MB DRAM	POSIP-OC3-16-M
	Packet OC-3 Interface Processor, 1-port 155.520-Mbps single-mode, 16-MB DRAM	POSIP-OC3-16-S
	Packet OC-3 Interface Processor, 1-port 155.520-Mbps multimode, 32-MB DRAM	POSIP-OC3-32-M
	Packet OC-3 Interface Processor, 1-port 155.520-Mbps single-mode, 32-MB DRAM	POSIP-OC3-32-S
SMIP	Service Provider MultiChannel Interface Processor, 2 E1 or ISDN PRI ports, 75 ohm unbalanced	CX-SMIP-2CE1/75
	Service Provider MultiChannel Interface Processor, 2 E1 or ISDN PRI ports, 75 ohm unbalanced and 120 ohm balanced	CX-SMIP-2CE1/120
	Service Provider MultiChannel Interface Processor, 2 T1 or ISDN PRI ports	CX-SMIP-2CT1
SSIP	Standard Serial Interface Processor, 8-port	CX-SSIP8
TRIP	Token Ring Interface Processor, 2-port	CX-TRIP2
	Token Ring Interface Processor, 4-port	CX-TRIP4
VIP[3]	Versatile Interface Processor with 1 Fast Ethernet (FE) port	VIP-FE-TX
	Versatile Interface Processor with 2 FE ports	VIP-FE-TX/FE-TX
	Versatile Interface Processor with 1 FE and 4 Ethernet ports	VIP-FE-TX/4E
	Versatile Interface Processor with 4 10-Mbps Ethernet, 4 serial	VIP-4E/4T
	Versatile Interface Processor with 4 Token Ring, 4 serial	VIP-4R/4T

Interface Processor	Description	Product Number
VIP2 port adapters	VIP2 port adapter with 4 Ethernet ports	PA-4E
	VIP2 port adapter with 8 Ethernet ports	PA-8E
	VIP2 port adapter with 1 Fast Ethernet (FE) port, twisted pair	PA-FE-TX
	VIP2 port adapter with 1 FE port, fiber-optic	PA-FE-FX
	VIP2 port adapter with 4 Token Ring ports	PA-4T
	VIP2 port adapter with 4 EIA-232, EIA-449, EIA-530, V.35, X.21 ports	PA-4R
	VIP2 port adapter with 5 Ethernet 10Base-FL ports	PA-5EFL
	VIP2 port adapter with 1 FDDI multimode port	PA-FDDI-MM
	VIP2 port adapter with 1 FDDI single-mode port	PA-FDDI-SS
Investment Protection Program (IPP)	Choice of interface processor upgrades	See Table 105 in the chapter "Interface Processors and Port Adapters for the Cisco 7000 Family"

1. Refer to the section "CIP" in the chapter "Interface Processors and Port Adapters for the Cisco 7000 Family" for memory and software considerations.
2. Each interface processor ships with two port adapters. You can order spares by adding an equal sign (=) to the product number.
3. Refer to the sections "VIP" and "VIP2" in the chapter "Interface Processors for the Cisco 7000 Family" for memory and software considerations.

Note For interface processor and port adapter cables, see Table 108 (Cisco 7500 series), Table 110 (Cisco 7200 series), or Table 109 (Cisco 7000 series).

Port Adapters

The following table lists the port adapters common to the VIP2 interface processor for the Cisco 7000 series and Cisco 7500 series routers and the Cisco 7200 series routers.

Table 107 VIP2 and Cisco 7200 Series Port Adapters

Description	Product Number
4 Ethernet 10BaseT ports	PA-4E
8 Ethernet 10BaseT ports	PA-8E
1 Fast Ethernet port	PA-FE-TX PA-FE-FX
4 synchronous serial ports supporting EIA/TIA-232, EIA/TIA-449, EIA-530, X.21, and V.35	PA-4T
4 Token Ring ports	PA-4R
5 Ethernet 10BaseFL ports	PA-5EFL
1 FDDI multimode	PA-FDDI-MM
1 FDDI single-mode	PA-FDDI-SS

Cisco 7500 Series Options

Table 108 lists product numbers that apply to an initial order for a Cisco 7505, Cisco 7507, or Cisco 7513 router. Note that you can order many options as a spare by adding an equal sign (=) to the product number. Refer to a previous chapter, “Cisco 7500 Series,” for tables that include product numbers for spares and upgrades.

To order a router, select a base unit and then order specific options listed in Table 108. The base unit comes with a console cable, an auxiliary cable, an RSP, an AC power supply, and a power cord. Default components are included in the price of the base unit.

The last pages of this chapter provide worksheets for planning your system.

Table 108 Cisco 7500 Series Product Numbers

Description	Product Number
Base Unit	
Cisco 7505 router (chassis, power supply, fan, RSP1)	CISCO7505
Cisco 7507 router (chassis, power supply, fan, RSP2)	CISCO7507
Cisco 7513 router (chassis, power supply, blower, RSP2)	CISCO7513
Cisco 7505 Power Supply[1]	
Single DC-input power supply	PWR/5-DC
Single AC-input power supply, Australia	PWR/5-ACA=
Single AC-input power supply, Europe	PWR/5-ACE=
Single AC-input power supply, Italy	PWR/5-ACI=
Single AC-input power supply, United Kingdom	PWR/5-ACU=
Cisco 7507 Power Supply[2]	
Single AC-input power supply, U. S. (default)	PWR/7
Single AC-input power supply, Australia	PWR/7-ACA=
Single AC-input power supply, Europe	PWR/7-ACE=
Single AC-input power supply, Italy	PWR/7-ACI=
Single AC-input power supply, United Kingdom	PWR/7-ACU=
Single DC-input power supply	PWR/7-DC
Dual AC-input power supply	PWR/7/2
Dual DC-input power supply	PWR/7/2-DC
Cisco 7513 Power Supply	
Single AC-input power supply, U. S. (default)	PWR-7513
Single AC-input power supply, Australia	PWR-7513-ACA=
Single AC-input power supply, Europe	PWR-7513-ACE=
Single AC-input power supply, Italy	PWR-7513-ACI=
Single AC-input power supply, United Kingdom	PWR-7513-ACU=
Single DC-input power supply	PWR-7513-DC
Dual AC-input power supply	PWR-7513/2
Dual DC-input power supply	PWR-7513/2-DC

Description	Product Number
Processor	
Cisco 7505 Route Switch Processor	RSP1
Cisco 7507 and Cisco 7513 Route Switch Processor	RSP2[3, 4]
Flash Memory	
8-MB PCMCIA Flash memory card (default)	MEM-RSP-FLC8M
16-MB PCMCIA Flash memory card	MEM-RSP-FLC16M
20-MB PCMCIA Flash memory card	MEM-RSP-FLC20M
DRAM	
8-MB DRAM (upgrade only)[5]	MEM-RSP-8M=
16-MB DRAM (default)	MEM-RSP-16M
24-MB DRAM[6]	MEM-RSP-24M
32-MB DRAM [7]	MEM-RSP-32M
64-MB DRAM	MEM-RSP-64M
128-MB DRAM	MEM-RSP-128M
Boot ROM Upgrade	
Boot ROM upgrade[8]	ROMMON-RSP2=
Interface Processors	
Choice of interface processors	See Table 106
AIP Cable	
RG-59 coaxial cable with BNC connectors for DS3 and E3 PLIMs	CAB-ATM-DS3/E3=
HIP Cables	
HSSI, null modem, DTE	CAB-HNUL
HSSI, male-to-male	CAB-HSI1
MIP Channelized T1 Cables	
DSX1 to CSU BD-15 null	CAB-7KCT1DB15
DSX1 to CSU BD-15 thru	CAB-7KCT1NULL
MIP/SMIP Channelized E1 Cables	
EI ISDN PRI, 10'	CAB-E1-PRI
E1 BNC 75-ohm unbalanced, 5 m	CAB-E1-BNC
E1 DB-15 120-ohm balanced, 5 m	CAB-E1-DB15
E1 TWINAX 120-ohm balanced, 5 m	CAB-CAB-EI-TWINAX
FSIP/SSIP Cables	
X.21 high-density male DTE	CAB-X21MT
X.21 high-density female CDE	CAB-X21FC
EIA/TIA-449 high-density male DTE	CAB-449MT
EIA/TIA-449 high-density female DCE	CAB-449FC
V.35 high-density male DTE	CAB-V35MT

Description	Product Number
V.35 high-density female DCE	CAB-V35FC
EIA/TIA-232 high-density male DTE	CAB-232MT
EIA/TIA-232 high-density female DCE	CAB-232FC
EIA-530 high-density male DTC	CAB-530MT
E1-G.703/G.704 twinax 120-ohm, balanced 5 m	CAB-EI-TWINAX
E1-G.703/G.704 DB-15 120-ohm, balanced 5 m	CAB-EI-DB15
E1-G.703/G.704 BNC 75-ohm, balanced 5 m	CAB-EI-BNC
CIP Cables	
CIP—Upstream parallel channel interface for CX-CIP-PCA1, CX-CIP-PCA2, CX-CIP-ECAP[9, 10]	CAB-PCA-VA
CIP—Downstream parallel channel interface for CX-CIP-PCA1, CX-CIP-PCA2, CX-CIP-ECAP[10]	CAB-PCA-VB
Spare 78-pin D-shell cable for CIP	CAB-PCA-Y=
All Other Cables	Customer supplied
Investment Protection Program (IPP)	
Choice of interface processor upgrades	See Table 105 in the chapter “Interface Processors and Port Adapters for the Cisco 7000 Family”
Software	
Software Feature Sets	
Enterprise	SF-G75A-1x.x.x[11]
Enterprise, VIP/VIP2[12], HSA[13]	SF-G75AV-11.1x
Enterprise, APPN	SF-G75AN-1x.x.x
Enterprise, APPN, VIP/VIP2[12], HSA[13]	SF-G75ANV-11.1.x
Desktop, IBM	SF-G75BS-1x.x.x
Desktop, IBM, VIP/VIP2[12], HSA[13]	SF-G75BSV-11.1.x
IP/IPX, IBM	SF-G75DS-1x.x.x
IP/IPX, IBM, VIP/VIP2[12], HSA[13]	SF-G75DSV-11.1.x
IP/IPX, IBM, APPN	SF-G75DSN-1x.x.x
IP/IPX, IBM, APPN, VIP/VIP2[12], HSA[13]	SF-G75DSNV-11.1.x
IP only	SF-G75C-1x.x.x
IP, VIP/VIP2[12], HSA[13]	SF-G75CV-11.1.x

Description	Product Number
Software Feature Licenses	
WAN Packet Protocols (optional)	FR-WPP75
Interdomain Routing (optional)[14]	FR-IR75
VIP/VIP2[12] software[15]	VIPIOS/DSW
CIP software[16]	FR-CIP-TCPOFF, FR-CIP-CSNA

1. Same power supply as the Cisco 7010 router and can be used interchangeably.
2. Same power supply as the Cisco 7000 router and can be used interchangeably.
3. Order RSP2 spare console and auxiliary cables using product numbers CAB-RSP2CON= and CAB-AUX2=, respectively.
4. Dual RSP2s are supported by Cisco IOS Release 11.1(2) and later. ROMMON-RSP2+ Version 11.1(2) or later is required for HSA.
5. MEM-RSP-8M= (consisting of two, 4-MB DRAM SIMMs) can be used to upgrade the default 16-MB configuration to 24 MB, and to upgrade the 32-MB configuration to 40 MB.
6. The 24-MB DRAM configuration is also available as an 8-MB upgrade to the default 16-MB configuration, by adding Product Number MEM-RSP-8M= (consisting of two, 4-MB DRAM SIMMs), for a total of 24 MB.
7. The 32-MB DRAM configuration can be upgraded in the field to 40 MB by adding the 8-MB DRAM upgrade (MEM-RSP-8M=) to the 32 MB of DRAM already on the RSP.
8. Use when boot ROM Version 11.1(2) or later is necessary for HSA (dual RSP2) support.
9. Bus and tag cables and ESCON cables can be ordered from IBM.
10. This cable, either from Cisco or IBM, is mandatory for CIP bus and tag channel connection to CX-CIP-PCA1, CX-CIP-PCA2, or CX-CIP-ECAP1.
11. Where x stands for current software and release levels, for example, SF-G75A-1x.x.x could mean SF-G75A-10.3.6, SF-G75A-11.0.1, or SF-G75A-11.1.1.
12. VIP2 requires Cisco IOS Release 11.1(472), or later, for example, SF-G75AV-11.1.472.
13. HSA is supported in Cisco IOS Release 11.1(2).
14. This option is appropriate for all Cisco 7500 series system processors. (Interdomain routing is automatically included with all Cisco 7000 series RPs with 16-MB RAM.)
15. Any order for a VIP/VIP2 board automatically includes this software license for distributed VIP switching at no extra charge.
16. Any order for a CIP board must include one or both of the CIP software feature licenses.

Cisco 7000 Series Options

Table 109 lists product numbers that apply to an initial order for a Cisco 7000 or Cisco 7010 router. Note that you can order many options as a spare by adding an equal sign (=) to the product number. Refer to a previous chapter, “Cisco 7000 Series,” for tables that include product numbers for spares and upgrades.

To order a router, select a base unit and then order specific options listed in Table 109. The standard base unit comes with a console cable, an auxiliary cable, an RP, an SP, an AC power supply, and a power cord. Default components are included in the price of the base unit.

Note For cable illustrations, see the chapter “Cables and Transceivers.”

The last pages of this chapter provide worksheets for planning your system.

Table 109 Cisco 7000 Series Product Numbers

Description	Product Number
Base Unit	
Cisco 7000 router	CISCO7000
Cisco 7010 router	CISCO7010
Cisco 7000 Power Supply[1]	
Single AC-input power supply for USA (default)	PWR/7-AC
Single AC-input power supply for Australia	PWR/7-ACA=
Single AC-input power supply for Europe	PWR-7000-ACE=
Single AC-input power supply for Italy	PWR/7-ACI=
Single AC-input power supply for United Kingdom	PWR/7-ACU=
Dual AC-input power supply	PWR/7/2
Single DC-input power supply[2]	PWR/7-DC
Dual DC-input power supply[2]	PWR/7/2-DC
Cisco 7010 Power Supply[1]	
Single AC-input power supply (default)	PWR/5-AC
Single AC-input power supply for Australia	PWR/5-ACA=
Single AC-input power supply for Europe	PWR/5-ACE=
Single AC-input power supply for Italy	PWR/5-ACI=
Single AC-input power supply for United Kingdom	PWR/5-ACU=
Single DC-input power supply[2]	PWR/5-DC=
Route Processor (RP)	
Route Processor with 16-MB RAM (default)	RP
Route Processor with 64-MB RAM[3]	RP-64MB
Switch Processor (SP/SSP)	
Switch Processor (default)	SP
Silicon Switch Processor with 512-KB packet memory[4]	SSP
Silicon Switch Processor with 2-MB packet memory[5]	SSP-2MB
RP Flash Memory Cards[6]	
8-MB Flash memory card with sleeve	MEM-RP-FLC8M
16-MB Flash memory card with metal sleeve	MEM-RP-FLC16M
RSP7000	
RSP upgrade kit for the Cisco 7000/7010	UPG-RSP7000
RSP7000 Flash Memory	
8-MB PCMCIA Flash memory card (default)	MEM-RSP-FLC8M
16-MB PCMCIA Flash memory card	MEM-RSP-FLC16M
20-MB PCMCIA Flash memory card	MEM-RSP-FLC20M
RSP7000 DRAM	
8-MB DRAM (upgrade only)[7]	MEM-RSP-8M=

Description	Product Number
16-MB DRAM (default)	MEM-RSP-16M
24-MB DRAM[8]	MEM-RSP-24M
32-MB DRAM [9]	MEM-RSP-32M
64-MB DRAM	MEM-RSP-64M
128-MB DRAM	MEM-RSP-128M
Interface Processors	
Choice of interface processors	See Table 106
AIP Cable	
RG-59 coaxial cable with BNC connectors for DS3 and E3 PLIMs	CAB-ATM-DS3/E3=
HIP Cables	
HSSI, null modem, DTE	CAB-HNUL
HSSI, male-to-male	CAB-HSI1
MIP Channelized T1 Cables	
DSX1 to CSU BD-15 thru	CAB-7KCT1DB15
DSX1 to CSU BD-15 null	CAB-7KCT1NULL
MIP/SMIP Channelized E1 Cables	
EI ISDN PRI, 10'	CAB-E1-PRI
E1 BNC 75-ohm unbalanced, 5 m	CAB-E1-BNC
E1 DB-15 120-ohm balanced, 5 m	CAB-E1-DB15
E1 TWINAX 120-ohm balanced, 5 m	CAB-CAB-EI-TWINAX
FSIP/SSIP Cables	
X.21 high-density male DTE	CAB-X21MT
X.21 high-density female CDE	CAB-X21FC
EIA/TIA-449 high-density male DTE	CAB-449MT
EIA/TIA-449 high-density female DCE	CAB-449FC
V.35 high-density male DTE	CAB-V35MT
V.35 high-density female DCE	CAB-V35FC
EIA/TIA-232 high-density male DTE	CAB-232MT
EIA/TIA-232 high-density female DCE	CAB-232FC
EIA-530 high-density male DTC	CAB-530MT
E1-G.703/G.704 twinax 120-ohm, balanced 5 m	CAB-EI-TWINAX
E1-G.703/G.704 DB-15 120-ohm, balanced 5 m	CAB-EI-DB15
E1-G.703/G.704 BNC 75-ohm, balanced 5 m	CAB-EI-BNC
CIP Cables	
CIP—Upstream parallel channel interface for CX-CIP-PCA1, CX-CIP-PCA2, CX-CIP-ECAP[10, 11]	CAB-PCA-VA
CIP—Downstream parallel channel interface for CX-CIP-PCA1, CX-CIP-PCA2, CX-CIP-ECAP[10]	CAB-PCA-VB
Spare 78-pin D-shell cable for CIP	CAB-PCA-Y=

Description	Product Number
Investment Protection Program (IPP)	
Choice of interface processor upgrades	See Table 105 in the chapter "Interface Processors and Port Adapters for the Cisco 7000 Family"
Software	
RP Software Feature Sets	
Enterprise	SW-G7A-1x.x.x [12]
Enterprise, VIP/VIP2[13]	SW-G7AV-11.1.x
Enterprise, APPN	SW-G7AN-1x.x.x
Enterprise, APPN, VIP/VIP2[13]	SW-G7ANV-11.1.x
Desktop, IBM	SW-G7BS-1x.x.x
Desktop, IBM, VIP/VIP2[13]	SW-G7BSV-11.1.x
IP/IPX, IBM	SW-G7DS-1x.x.x
IP/IPX, IBM, VIP/VIP2[13]	SW-G7DSV-11.1.x
IP/IPX, IBM, APPN	SW-G7DSN-1x.x.x
IP/IPX, IBM, APPN, VIP/VIP2[13]	SW-G7DSNV-11.1.x
IP only	SW-G7C-1x.x.x
IP, VIP/VIP2[13]	SW-G7CV-11.1.x
RP Software Feature Licenses	
WAN Packet Protocols (optional)	FR-WPP7
Interdomain Routing (optional)[14]	FR-IR7
VIP/VIP2[13] software[15]	VIPIOS/DSW
CIP software[16]	FR-CIP-TCPOFF, FR-CIP-CSNA
RSP7000 Software Feature Sets	
Enterprise	SF-G75A-1x.x.x[12]
Enterprise, VIP/VIP2[13]	SF-G75AV-11.1x
Enterprise, APPN	SF-G75AN-1x.x.x
Enterprise, APPN, VIP/VIP2[13]	SF-G75ANV-11.1.x
Desktop, IBM	SF-G75BS-1x.x.x
Desktop, IBM, VIP/VIP2[13]	SF-G75BSV-11.1.x
IP/IPX, IBM	SF-G75DS-1x.x.x
IP/IPX, IBM, VIP/VIP2[13]	SF-G75DSV-11.1.x
IP/IPX, IBM, APPN	SF-G75DSN-1x.x.x
IP/IPX, IBM, APPN, VIP/VIP2[13]	SF-G75DSNV-11.1.x
IP only	SF-G75C-1x.x.x
IP, VIP /VIP2[13]	SF-G75CV-11.1.x

Description	Product Number
RSP7000 Software Feature Licenses (optional)	
WAN Packet Protocols	FR-WPP75
Interdomain Routing[14]	FR-IR75
VIP/VIP2[13] software[15]	VIPIOS/DSW
CIP software[16]	FR-CIP-TCPOFF, FR-CIP-CSNA

1. All AC power supplies include a power cord.
2. DC power supplies do not include a power cord.
3. Order RP-64MB for large networks.
4. Requires Cisco IOS Release 10.0 or later.
5. Requires Cisco IOS Release 10.0 or later, with Releases 10.2(x) and 10.3(x) recommended.
6. Requires Cisco IOS Release 11.0 or later software and Cisco IOS 11.0 ROMs
7. MEM-RSP-8M= (consisting of two, 4-MB DRAM SIMMs) can be used to upgrade the default 16-MB configuration to 24 MB, and to upgrade the 32-MB configuration to 40 MB.
8. The 24-MB DRAM configuration is also available as an 8-MB upgrade to the default 16-MB configuration, by adding Product Number MEM-RSP-8M= (consisting of two, 4-MB DRAM SIMMs), for a total of 24 MB.
9. The 32-MB DRAM configuration can be upgraded in the field to 40 MB by adding the 8-MB DRAM upgrade (MEM-RSP-8M=) to the 32 MB of DRAM already on the RSP.
10. Bus and tag cables and ESCON cables can be ordered from IBM.
11. This cable, either from Cisco or IBM, is mandatory for CIP bus and tag channel connection to CX-CIP-PCA1, CX-CIP-PCA2, or CX-CIP-ECAP1.
12. Where 1x.x.x stands for the current Cisco IOS software release and maintenance level, for example, SW-G7A-10.3.9, SW-G7A-11.0.1, or SW-G7A-11.1.1.
13. VIP2 requires Cisco IOS Release 11.1(472), or later, for example, SF-G75AV-11.1.472.
14. Interdomain routing is automatically included with all Cisco 7000 series RPs with 16-MB RAM. However, this option is appropriate for all other Cisco 7000 and 7500 series system processors.
15. Any order for a VIP board automatically includes this software license for distributed VIP switching at no extra charge.
16. Any order for a CIP board must include one or both of the CIP software feature licenses.

Cisco 7200 Series Options

Table 110 lists product numbers that apply to an initial order for a Cisco 7204 or Cisco 7206 router. Note that you can order many options as a spare by adding an equal sign (=) to the product number. Refer to a previous chapter, “Cisco 7200 Series,” for tables that include product numbers for spares and upgrades.

Note The Cisco 7204 and related product numbers will be available Q3 1996.

To order a router, select a base unit and then order specific options listed in Table 110. The base unit comes with a console cable, an auxiliary cable, an AC power supply, and a power cord. Default components are included in the price of the base unit.

The last pages of this chapter provide worksheets for planning your system.

Note For the Cisco 7206 and 7404, you must order an input/output controller and a network processing engine.

Table 110 Cisco 7200 Series Product Numbers

Description	Product Number
Base Unit	
Cisco 7206 router (6-slot chassis, 1 AC-input power supply)	CISCO7206
Cisco 7206, 6-slot chassis, 1 DC-input power supply[1]	CISCO7206-DC
Cisco 7204 router (4-slot chassis, 1 AC-input power supply)[1]	CISCO7204
Cisco 7204 router (4-slot chassis, 1 DC-input power supply)[1]	CISCO7204-DC
Cisco 7200 Power Supply[2]	
AC-input power supply for United States	PWR-7200-AC=
AC-input power supply for Australia	PWR-7200-ACA=
AC-input power supply for Europe	PWR-7200-ACE=
AC-input power supply for Italy	PWR-7200-ACI=
AC-input power supply for United Kingdom	PWR-7200-ACU=
Dual AC-input power supply, 280W	PWR-7200/2
DC-input power supply[1,3]	PWR-7200-DC
DC-input power supply (spare)[1]	PWR-7200-DC=
Dual DC-input power supply[1]	PWR-7200/2-DC=
Network Processing Engine	
Network processing engine, 150 MHz, 16-MB DRAM	NPE-150
Network processing engine, 150 MHz, 16-MB DRAM (spare)[4]	NPE-150=
Input/Output Controller	
Fast Ethernet (100BaseT) input/output controller	CONTRL-I/O-FE-TX
Fast Ethernet (100BaseT) input/output controller (spare)	CONTRL-I/O-FE-TX=
Input/output controller[1]	CONTRL-I/O
Input/output controller (spare)[1]	CONTRL-I/O=
Flash Memory Cards	
8-MB PCMCIA Flash memory card (default)	MEM-NPE-FLC8M
8-MB PCMCIA Flash memory card (spare)[5]	MEM-NPE-FLC8M=
16-MB PCMCIA Flash memory card	MEM-NPE-FLC16M
16-MB PCMCIA Flash memory card (spare)[5]	MEM-NPE-FLC16M=
20-MB PCMCIA Flash memory card	MEM-NPE-FLC20M
20-MB PCMCIA Flash memory card (spare)[5]	MEM-NPE-FLC20M=
Cisco 7200 Network Processing Engine DRAM	
8-MB DRAM upgrade kit (spare)	MEM-NPE-8MB=
16-MB DRAM upgrade (default)	MEM-NPE-16MB
16-MB DRAM upgrade kit (spare)	MEM-NPE-16MB=
24-MB DRAM upgrade kit	MEM-NPE-24MB
32-MB DRAM upgrade kit	MEM-NPE-32MB
32-MB DRAM upgrade kit (spare)	MEM-NPE-32MB=

Description	Product Number
64-MB DRAM upgrade kit	MEM-NPE-64MB
64-MB DRAM upgrade kit (spare)	MEM-NPE-64MB=
128-MB DRAM upgrade kit	MEM-NPE-128MB
128-MB DRAM upgrade kit (spare)	MEM-NPE-128MB=
Port Adapters	
4 Ethernet 10BaseT ports	PA-4E
8 Ethernet 10BaseT ports	PA-8E
1 Fast Ethernet (100BaseT) port	PA-FE-TX PA-FE-FX
4 synchronous serial ports supporting EIA/TIA-232, EIA/TIA-449, EIA-530, X.21, and V.35	PA-4T
4 Token Ring ports	PA-4R
5 Ethernet 10BaseFL ports	PA-5EFL
1 FDDI multimode port	PA-1F-MM
1 FDDI single-mode port	PA-1F-SM
FSIP/SSIP Cables	
X.21 high-density male DTE	CAB-X21MT
X.21 high-density female CDE	CAB-X21FC
EIA/TIA-449 high-density male DTE	CAB-449MT
EIA/TIA-449 high-density female DCE	CAB-449FC
V.35 high-density male DTE	CAB-V35MT
V.35 high-density female DCE	CAB-V35FC
EIA/TIA-232 high-density male DTE	CAB-232MT
EIA/TIA-232 high-density female DCE	CAB-232FC
EIA-530 high-density male DTC	CAB-530MT
Software	
Software Feature Sets	
Enterprise	SF-G72A-11.1.x[6] SW-G72A-11.1.x=
Enterprise, APPN	SF-G72AN-11.1.x SW-G72AN-11.1.x=
Desktop and IBM	SF-G72DS-11.1.x SW-G72DS-11.1.x=
Network Layer 3 switching	SF-G72R-11.1.x SW-G72R-11.1.x=
Desktop, IBM to Enterprise Cisco IOS upgrade	FR72-BSA=
Network Layer 3 switch-to-desktop and IBM Cisco IOS upgrade	FR72-CDS=
Network Layer 3 switch-to-Enterprise IOS upgrade	FR72-CA=

Description	Product Number
Software Feature Licenses	
WAN Packet Protocols	FR-WPP72, FR-WPP72=
Interdomain Routing	FR-IR72, FR-IR72=
NetFlow[1]	FR-NF72, FR-NF72=

1. Available Q3 1996.
2. All AC power supplies include a power cord.
3. DC power supplies do not include a power cord.
4. By default, spare processors ship with an 8-MB PCMCIA Flash memory card, which is unformatted and does not contain a Cisco IOS software image.
5. Spares are shipped blank and unformatted.
6. Where x represents the current Cisco IOS software maintenance release number, for example, SW-G7A-11.1.472. Requires Cisco IOS Release 11.1(472) or later.

Planning Optimum Configurations

This section provides guidelines for planning a configuration with optimum performance. Topics include Cisco's recommendations for VIP memory, CIP memory, Flash memory cards, and DRAM.

VIP Memory Guidelines

Use Table 111 when ordering VIP memory options.

Table 111 VIP Memory Guidelines

Description	Memory Size
Distributed switching Distributed features <1,000 IP routes	8 MB
Distributed switching Distributed features >1,000 IP routes	32 MB
VIP2 memory requirements controlled by the software sensing the memory configuration of the VIP2	–

CIP Memory Guidelines

Use Table 112 as a simple means to determine a conservative session capacity for the three CIP DRAM configurations. If a single feature is being deployed with a single session type, use this table. However, if multiple features are deployed concurrently, use the formulas in Table 113.

Table 112 CIP Memory Guidelines

Description	Telnet Sessions	Other TCP Sessions	LLC Sessions
CIP with 8-MB DRAM	900	80	200
CIP with 32-MB DRAM	4,500	450	2,000
CIP with 64-MB DRAM	10,000	950	4,000

Table 113 CIP Memory Formulas

Description	Formula
TCP/IP offload feature only	2.5 MB + (6 KB x number of Telnet sessions) + (64 KB x number of other TCP sessions)
CSAN feature only	5.0 MB + (12 KB x number of LLC sessions)
TCP/IP offload and CSAN concurrently	6.5 MB + (6 KB x number of telnet sessions) + (64 KB x number of other TCP sessions) + (12 KB x number of LLC sessions)

For example, if you are configuring the memory for the CSAN feature and you are planning to support 1024 LLC connections, the amount of DRAM required is calculated as follows:

5.0 MB + (12 KB x 1024) = 17 MB

Since the default memory for the CIP is 8 MB, you will need to order 32 MB of CIP DRAM.

If you are configuring the CIP for TCP/IP offload and you are planning to support 2048 Telnet sessions and 256 FTP sessions, then the formula is as follows:

2.5 MB + (6 KB x 2048) + (64 KB x 256) = 30.5 MB

This configuration will also require 32 MB of CIP DRAM.

Flash Memory Card Guidelines

Use the following guidelines when ordering Flash memory cards:

- Use one card for image storage and another for configurations.
- The number of system images that can be stored on the card depends both on the Flash Memory card size and the file size.

For complete information about the Cisco 7000 series Flash memory card, see the section “Flash Memory Cards” in the chapter “Cisco 7000 Series.” For complete information about the Cisco 7500 series Flash memory card, see the section “Flash Memory Cards” in the chapter “Cisco 7500 Series.”

DRAM Guidelines

Use the following guidelines when ordering DRAM for the Cisco 7000 family:

- For the RSP1, RSP2, or RSP7000, DRAM is contained in four SIMM slots (two banks of two SIMMs each).
- For the RSP1, RSP2, or RSP7000, Bank 0 must be greater than or equal to Bank 1.
- Do not mix DRAM sizes within a bank.
- Refer to Table 114 for DRAM size recommendations based on the size of your network. Then, consult with your Cisco system engineer to determine the recommended DRAM configuration for your unique network.
- Refer to Table 115 for DRAM size requirements for a Cisco 7500 series router running Cisco IOS Release 11.1.
- Refer to Table 116 for default SIMM configurations for the 7500 series. These factory defaults are designed so that your initial order can be easily upgraded.

Table 114 DRAM Size Recommendations—RSP1, RSP2, RSP7000

Network Size	Cisco 7000	Cisco 7010	Cisco 7505	Cisco 7507	Cisco 7513	RSP7000
Small[1]	16 MB	16 MB	16 MB	16 MB	32 MB	16 MB
Medium[2]	16 MB	16 MB	32 MB	32 MB	32 MB	32 MB
Large[3]	64 MB	64 MB	64 MB	64 MB	64 MB	64 MB

1. Small networks efficiently support <2,000 IP routes.
2. Medium networks efficiently support 2,000 to 10,000 IP routes.
3. Large networks efficiently support >10,000 IP routes.

Table 115 DRAM Size Requirements—RSP1, RSP2, RSP7000 Running Cisco IOS Release 11.1

Features	RSP Only	RSP, Slave RSP, and VIP
Enterprise	16 MB	24 MB
Enterprise/APPN	24 MB	24 MB
Desktop	16 MB	24 MB
Desktop/IBM	16 MB	24 MB
IP/IPX/IBM	16 MB	24 MB
IP/IPX/IBM/APPN	16 MB	24 MB
IP only	16 MB	24 MB

Table 116 SIMM Default Configurations—RSP1, RSP2, RSP7000

Available DRAM memory	SIMM Size	Number of SIMMs
16 MB	8 MB	2
24 MB	2 4-MB and 2 8-MB	4
32 MB	16 MB	2
64 MB	32 MB	2
128 MB	32 MB	4

Verifying Interface Processor Compatibility

This section describes how to find out if an existing interface processor is compatible with a Cisco 7500 series router or a Cisco 7000 series router upgraded to include an RSP7000. These procedures are part of the "Investment Protection Program (IPP)" described in the chapter "Interface Processors for the Cisco 7000 Family."

Process Flowchart

To determine compatibility, use the flowchart in Figure 32 and the compatibility guidelines in Table 117. If you need help in determining a board's part number and revision, see the next section, "Determining Board Part Number and Revision."

Figure 32 Interface Processor Compatibility Flowchart

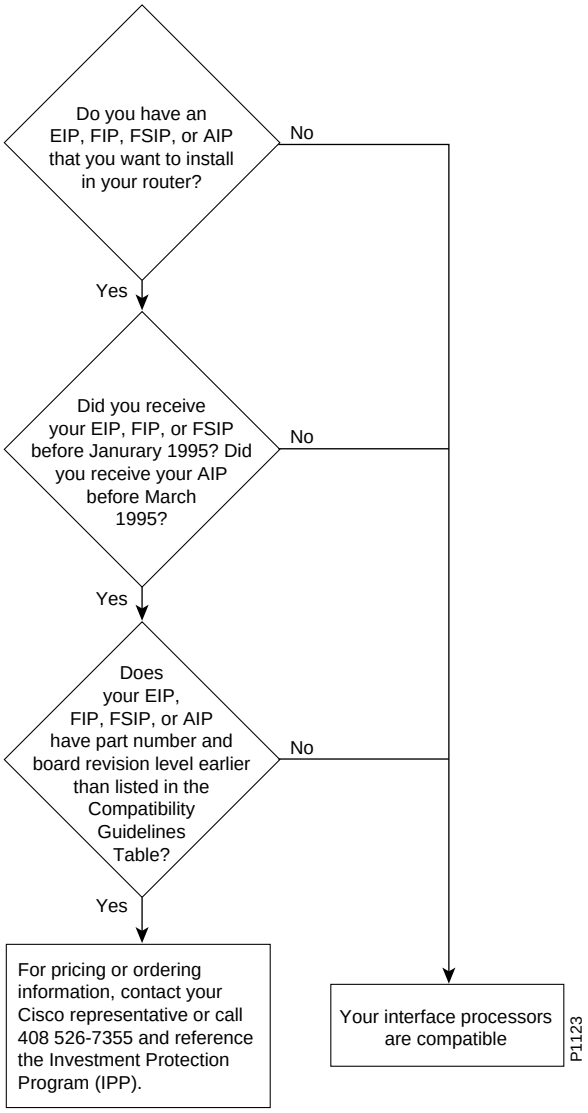


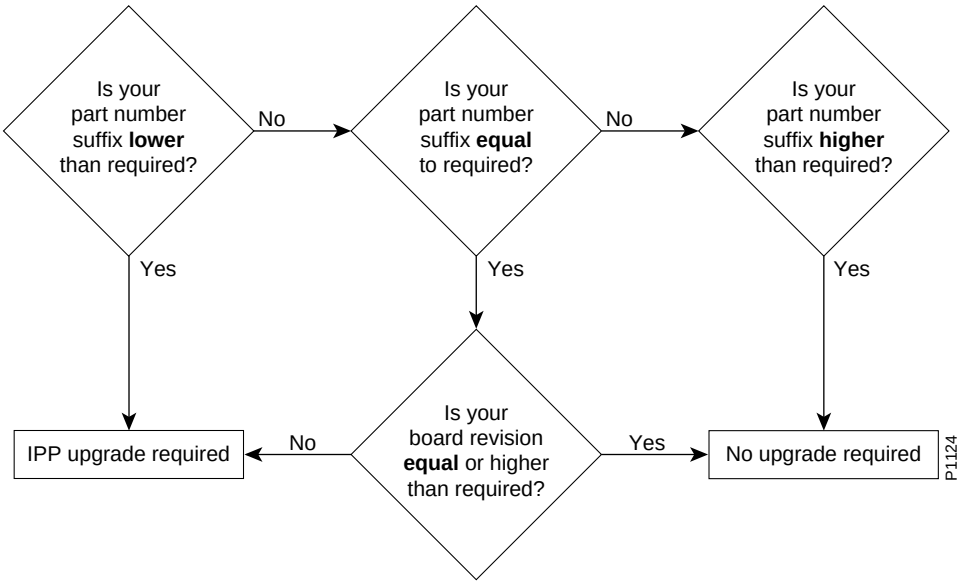
Table 117 Interface Processor Compatibility Guidelines

Product Number	Board Part Number[1, 2]	Board Revision[3, 4]
CX-AIP-SS	73-1188-**02**	D0 or later
CX-AIP-SM	73-1188-**02**	D0 or later
CX-AIP-TM	73-1188-**02**	D0 or later
CX-AIP-DS3	–	Does not require an upgrade
CX-AIP-E3	–	Does not require an upgrade
CX-EIP2	73-1129-**02**	N0 or later
CX-EIP4	73-1132-**02**	N0 or later
CX-EIP6	73-0906-**02**	N0 or later
CX-FIP-MM	73-0892-**03**	M0 or late
CX-FIP-MS	73-1093-**03**	M0 or later
CX-FIP-SM	73-1090-**03**	M0 or later
CX-FIP-SS	73-1087-**03**	M0 or later
CX-FSIP4	73-1187-**05**	A0 or later
CX-FSIP8	73-1126-**05**	A0 or later
All other interface processors[5]	–	–

1. A board part number is compatible with Cisco 7500 series or RSP7000 systems if it is equal to or greater than those listed in this column. (See Figure 33.)
2. The suffix of the part number reflects the fab revision. (See "Cisco Board Numbering Conventions.")
3. It may not be necessary to check the board revision level, because the part number suffix itself may determine compatibility. (See Figure 33.)
4. A board revision should only be checked if the part number suffix is equal to those listed in the table. In this case, the board revision must be greater than or equal to those listed in the table. (See Figure 33.)
5. Any interface processors not specifically listed in the table are compatible with Cisco 7500 series or RSP7000.

Figure 33 provides a flowchart to use with Table 117.

Figure 33 Determining Compatibility from Board Part Numbers and Revision Levels



Cisco Board Numbering Conventions

Cisco uses the following conventions when assigning part numbers and revision levels:

- When a board is released, it ships with the first fab, which is displayed in the part number suffix, and a board revision of A0.

  Example: 73-0906-01 A0

- When Cisco modifies the board, the revision increments.

  Example: 73-0906-01 **B0**, 73-0906-01 **C0**, 73-0906-01 **D0**, and so forth.

- When Cisco decides to implement modifications into a fab, the part number suffix increments and the board revision returns to A0.

  Example: 73-0906-**01 M0** changed to 73-0906-**02 A0**

To illustrate Cisco's board revision conventions, Table 118 follows one board, 73-0906-XX, through several chronological revisions.

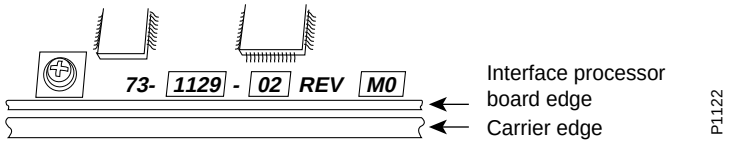
Table 118 Board Revision Example

Part Number and Revision	Description
73-0906-01 A0	Board is released.
73-0906-01 B0	Board is modified.
73-0906-01 C0	Board is again modified.
73-0906-01 D0	Board is again modified.
73-0906-02 A0	Modifications are rolled into a new fabrication shown in the part number suffix.
73-0906-02 B0	Board is modified.
73-0906-02 C0	Board is modified.

Determining Board Part Number and Revision

You can determine the part number and board revision of your interface processor in one of two ways: inspect the physical board or use the **show diagbus** command online.

The part number and board revision are typically silk-screened along an edge of the interface processor's printed circuit board:



You can also use the **show diagbus** command to determine the part number and board revision of your interface processor. The following is an example of a compatible CX-EIP6:

```
Router#show diagbus
Slot 0:
Physical slot 0, ~physical slot 0xF, logical slot 0, CBus 0
Microcode Status 0x0
Master Enable, LED, WCS Loaded
Board is analyzed
EEPROM format version 1
EIP controller, HW rev 1.5, board revision B0
Serial number: 01652924 Part number: 73-0906-04
Test history: 0x00        RMA number: 00-00-00
Flags: cisco 7000 board; 7500 compatible
 EEPROM contents (hex):
  0x20: 01 00 01 05 00 19 38 BC 49 03 8A 04 00 00 00 00
  0x30: 58 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
 Slot database information:
Flags: 0x4      Insertion time: 980 (5d20 ago)
```

Note As of Cisco IOS Release 10.3(4), the Cisco 7000 series and 7500 series can determine whether an interface processor is Cisco 7500 compatible. This is stated in the Flags section of the **show diagbus** (above). Also, if a Cisco 7500 series processor is running Cisco IOS Release 10.3(4) or later, it will not accept a configuration command for an incompatible interface processor. See Table 117 for compatibility requirements.

Configuration Worksheets

This section contains configuration worksheets for the Cisco 7000 family of routers. Use the tables and configuration guidelines in this chapter to fill out your worksheet. The first worksheet is an example of a completed worksheet for a Cisco 7513.

Cisco 7513 Configuration Worksheet

Base unit: CISCO7513
Main power supply:
AC [√] DC [ ]
Redundant power supply (optional):
AC power cord: Included
Rack-mounting kit (included): Standard
Cable management kit (included): Standard
Software: SW-G75A-10.3.6

Slot	Processors/ Port Adapters	Memory		Cables	
		DRAM	Flash		Qty
0					
1	CX-FSIP8			CAB-V35MT	8
2	CX-HIP			CAB-HNUL	1
3	CX-FIP-MM				
4	CX-TRIP4				
5	CX-EIP6				
6	**RSP2**	MEM-RSP-32M	MEM-RSP-FLC20M		
7	**Reserved**				
8	CX-CIP-PCA2	EM-CIP-8M		CAB-PCA-VA	2
9					
10					
11					
12					

P1113

Cisco 7000 Configuration Worksheet

Base unit: CISCO7000
Main power supply:
AC ☐ DC ☐
Redundant power supply (optional):
AC power cord:
Rack-mounting kit (included): Standard
Software:

Slot	Processors/ Port Adapters	Memory		Cables	
		DRAM	Flash		Qty
0					
1					
2					
3					
4					
5	SP/SSP/SSP-2MB or RSP7000				
6	RP/RP-64MB or RSP7000CI				

P1109

Cisco 7010 Configuration Worksheet

Base unit: CISCO7010
Power supply:
AC ☐ DC ☐
AC power cord:
Rack-mounting kit (included): Standard
Cable management kit (included): Standard
Software:

Slot	Processors/ Port Adapters	Memory		Cables	
		DRAM	Flash		Qty
4	**RP/RP-64MB or RSP7000CI**				
3	**SP/SSP/SSP-2MB or RSP7000**				
2					
1					
0					

P1112

Cisco 7505 Configuration Worksheet

Base unit: CISCO7505
Power supply:
AC ❒ DC ❒
AC power cord:
Rack-mounting kit (included): Standard
Cable management kit (included): Standard
Software:

Slot	Processors/ Port Adapters	Memory		Cables	
		DRAM	Flash		Qty
4	**RSP1**				
3					
2					
1					
0					

P1111

Cisco 7507 Configuration Worksheet

Base unit: CISCO7507
Main power supply:
AC ☐ DC ☐
Redundant power supply (optional):
AC power cord:
Rack-mounting kit (included): Standard
Cable management kit (included): Standard
Software:

Slot	Processors/ Port Adapters	Memory		Cables	
		DRAM	Flash		Qty
0					
1					
2	RSP2				
3	Reserved				
4					
5					
6					

P1110

Cisco 7513 Configuration Worksheet

Base unit: CISCO7513
Main power supply:
AC ☐ DC ☐
Redundant power supply (optional):
AC power cord:
Rack-mounting kit (included): Standard
Cable management kit (included): Standard
Software:

Slot	Processors/ Port Adapters	Memory		Cables	
		DRAM	Flash		Qty
0					
1					
2					
3					
4					
5					
6	RSP2				
7	Reserved				
8					
9					
10					
11					
12					

P1108

Cisco 7206 Configuration Worksheet

Chassis unit: CISCO7206
Main power supply: ☐ AC ☐ DC ☐ Dual AC or DC (optional)
AC power cord:
Rack-mounting kit, cable management kit (both included): Standard

Port adapters: (select up to six)		
Slot	**Description**	**Cables**
6		
5		
4		
3		
2		
1		

Network Processing Engine – NPE: (select one)	
☐ NPE-150	Cisco 7200 Network Processing Engine, 150 MHz, 16-MB DRAM

Network Processing Engine DRAM upgrade: (select one)	
☐ MEM–NPE–16MB	Cisco 7200 NPE 16-MB DRAM upgrade kit (default)
☐ MEM–NPE–24MB	Cisco 7200 NPE 24-MB DRAM upgrade kit
☐ MEM–NPE–32MB	Cisco 7200 NPE 32-MB DRAM upgrade kit
☐ MEM–NPE–64MB	Cisco 7200 NPE 64-MB DRAM upgrade kit
☐ MEM–NPE–128MB	Cisco 7200 NPE 128-MB DRAM upgrade kit

Input/output controller: (select one)	
☐ C7200–I/O	Cisco 7200 input/output controller
☐ C7200–I/O–FE–TX	Cisco 7200 Fast Ethernet (100BaseT) input/output controller

PCMCIA Flash Memory: (select one)	
☐ MEM–I/O–FLC8M	Cisco 7200 I/O PCMCIA Flash memory card, 8-MB
☐ MEM–I/O–FLC16M	Cisco 7200 I/O PCMCIA Flash memory card, 16-MB
☐ MEM–I/O–FLC20M	Cisco 7200 I/O PCMCIA Flash memory card, 20-MB

Cisco IOS software feature set: (select one, note version when ordered)		
☐ SF–G72A–11.x.x	Cisco IOS Enterprise feature set	Version –
☐ SF–G72AN–11.x.x	Cisco IOS Enterprise, APPN feature set	Version –
☐ SF–G72DS–11.x.x	Cisco IOS Enterprise, Desktop, and IBM feature set	Version –
☐ SF–G72R–11.x.x	Cisco IOS Network Layer 3 switching feature set	Version –

Software feature licenses: (select one)	
☐ FR–WPP72	Cisco 7200 series WAN Packet protocols license
☐ SF–G72AN	Cisco 7200 series interdomain routing
☐ SF–G72DS	Cisco 7200 series NetFlow

Optional dual power supply: (select one, if required)	
☐ PWR–7200/2	Cisco 7200 dual AC–input power supply option
☐ PWR–7200/2–DC	Cisco 7200 dual DC–input power supply option

Cisco 7204 Configuration Worksheet

Chassis unit: CISCO7204
Main power supply: ☐ AC ☐ DC ☐ Dual AC or DC (optional)
AC power cord:
Rack-mounting kit, cable management kit (both included): Standard

Port adapters: (select up to four)		
Slot	**Description**	**Cables**
4		
3		
2		
1		

Network Processing Engine – NPE: (select one)	
☐ NPE-150	Cisco 7200 Network Processing Engine, 150 MHz, 16-MB DRAM

Network Processing Engine DRAM upgrade: (select one)	
☐ MEM–NPE–16MB	Cisco 7200 NPE 16-MB DRAM upgrade kit (default)
☐ MEM–NPE–24MB	Cisco 7200 NPE 24-MB DRAM upgrade kit
☐ MEM–NPE–32MB	Cisco 7200 NPE 32-MB DRAM upgrade kit
☐ MEM–NPE–64MB	Cisco 7200 NPE 64-MB DRAM upgrade kit
☐ MEM–NPE–128MB	Cisco 7200 NPE 128-MB DRAM upgrade kit

Input/output controller: (select one)	
☐ C7200–I/O	Cisco 7200 input/output controller
☐ C7200–I/O–FE–TX	Cisco 7200 Fast Ethernet (100BaseT) input/output controller

PCMCIA Flash Memory: (select one)	
☐ MEM–I/O–FLC8M	Cisco 7200 I/O PCMCIA Flash memory card, 8-MB
☐ MEM–I/O–FLC16M	Cisco 7200 I/O PCMCIA Flash memory card, 16-MB
☐ MEM–I/O–FLC20M	Cisco 7200 I/O PCMCIA Flash memory card, 20-MB

Cisco IOS software feature set: (select one, note version when ordered)		
☐ SF–G72A–11.x.x	Cisco IOS Enterprise feature set	Version –
☐ SF–G72AN–11.x.x	Cisco IOS Enterprise, APPN feature set	Version –
☐ SF–G72DS–11.x.x	Cisco IOS Enterprise, Desktop,and IBM feature set	Version –
☐ SF–G72R–11.x.x	Cisco IOS Network Layer 3 switching feature set	Version –

Software feature licenses: (select one)	
☐ FR–WPP72	Cisco 7200 series WAN Packet protocols license
☐ SF–G72AN	Cisco 7200 series interdomain routing
☐ SF–G72DS	Cisco 7200 series NetFlow

Optional dual power supply: (select one, if required)	
☐ PWR–7200/2	Cisco 7200 dual AC–input power supply option
☐ PWR–7200/2–DC	Cisco 7200 dual DC–input power supply option

P1127